VIDEO TECHNOLOGY
BASIC V1.2

READY

VTECH LASER
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by J. Pingo Lindstrom

THE STORY OF MR. B

The Laser 210 is a very personal thing for me – hence, this magazine. I felt that I had to write this down. Not only for my own sake, but to be able to preserve a piece of 8-bit history.

I got my first computer at Christmas, probably 1985. I do not recall the year exactly, but it has to be somewhere around 1984-1986. In 1987 my dad helped me sell the Laser 210 and buy a Commodore 128. But that's a completely different story...

I had annoyed my parents for many months, asking for a Commodore VIC 20 – or better yet, a Commodore 64! But those machines were expensive, and my parents were not rich. I knew I had no change getting a C64 – but a friend of mine had a VIC 20, and I would of course have been happy with that.

Then one day, my uncle informs my dad that a friend of my uncle's could provide us with a computer. For cheap. With games, joysticks and all that was needed for me to be happy.

The computer was a Laser 210, made by VTech in Hong Kong. The computer that I have photographed for this magazine is a similar one, brought into Sweden by the same person – but not my original.

This person – lets call him Mr. B – worked as an electronics engineer in Sweden, and – if I remember correctly – had his own company. This made it possible for him to travel to other countries and buy equipment. Hong Kong was one of these places, where he went and bought at least ten Laser 210's at the same time – and smuggled them back into Sweden.

What I wanted: *What I got:*





Left: Commodore 64 version of The Last Ninja. *Right:* Laser 210 boot screen.

This was in the early 1980's, when the Cold War was still raging. We had nuclear fallout drills at school, and the political situation was quite absurd. Sweden was a tightly secured socialistic country, resembling the countries behind the Iron Curtain, though not linked to the Soviet Union at all. On the contrary – we feared a Soviet invasion.

For a private company owners – like my father or Mr. B – the situation was difficult, with high taxes to pay – and high custom fees on electronics equipment. Hence, Mr. B smuggled the computers into Sweden without paying anything for this to the Swedish state.

Besides – he didn't want to get them registered. His main goal – as I found out years later – was to remodel these machines, and sell them further.

First, he created his own ROM. He replaced the old ROM with his newly burnt EEPROM. Second, he removed the keyboard and placed a flat brown piece over the hole where the keyboard had been.

When I met him to buy the joysticks for my computer – and copy some more games – he showed me a pile of old keyboards, ripped out from the computers that he already had "fixed".

The Laser 210 was a very interesting machine and easy to remodel as Mr. B did. Therefor, Mr. B could burn the new ROM and replace all parts needed within a few weeks, and have ten fresh machines ready to be shipped to his customer.

One of these machines were sold to my dad, who then gave it to me as a Christmas gift. I remember it very clearly – in fact, the two most important Christmas gifts I ever got was the Laser 210 computer and, the year before, the Fighting Fantasy game-book *The Warlock of Firetop Mountain* (and that's a different story as well).

The customer that Mr. B sold the remodeled machines to used them in industries to control robots. But why buy these from Mr. B?

Well – remember, this was in the middle of the 1980's. The customer was in fact none other than the ***Soviet Union***!

USSR, the Soviet Union, bought these machines to be used in factories – apparently to control industry robots. At least, that's how much I've understood from the conversations with Mr. B and my uncle, who told me a lot about these "dealings".

Mr. B simply took a tourist cruise ship from Sweden to Finland. They are available to go on today as well, but at that time they were even more used since you could buy tax-free liquor on board, which was a big deal for someone who came from a high-tax country as Sweden.

Sweden and Finland at the time had a passport union (together with the other Nordic countries), so there were no need for identification at the borders. This made it of course much more simple to travel with ten highly modified 8-bit computers, aimed for the Soviet factories.

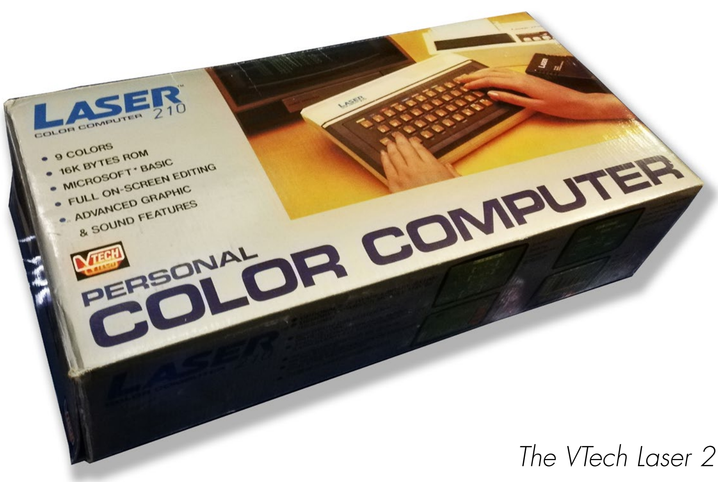
What happened after Mr. B entered Finland I do not know. But what I do know is that it was illegal to ship this kind of equipment behind the Iron Curtain at that time.

From what I know, Mr. B made several trips a year – both to Hong Kong and to Finland (and perhaps even into the Soviet Union itself).

I've heard later that some of these machines are actually still in use. That wouldn't surprise me, since the Laser 210 is a work horse. It is a simple, but beautiful, example of great 8-bit computer engineering.

And as such, it was a treat for a 10 year old to get as a Christmas gift.

Even if the machine was bought from a Russian spy...



The VTech Laser 210 box.

NAMING

The Laser-computers were named a lot of different names, depending on where it was sold, when and by who. In this text I will use *Laser*.

The computers were built by VTech in Hong Kong – opened up as *Video Technology Limited* in 1976. Their first factory was located in To Kwa Wan, which is a part of Kowloon.



The VTech Laser 210 box.

The first of the Laser-computers was the 100/110. It came out in 1983 and was basically a Tandy TRS Model 1-clone, with some differences to the ROM. It was a monochrome computer, which is probably the biggest difference from the 200/210.

The Laser 100/110 and 200/210 (and later 300/310 and the Laser 128) were named *Laser* in Hong Kong. In Australia these computers were mainly sold as *Dick Smith VZ* (followed by the same number as the Laser-computers). In Finland, they were sold as *Salora Fellow* and in United Kingdom as *Texet TX8000* (Laser 200/210). In Hungary and Italy it was sold as *Seltron 200*.



The Laser 210 computer. Note the odd placement of the space-button.

There were three kinds of Laser-computers based on the ZX80-chip. The 100/110 monochrome version, the 200/210 (which was the one I owned) with 8 colors (nine really, see below) and the later 300/310-version with a "real" keyboard. All the other versions used a rubber-chiclet keyboard which was – at times – pretty annoying to use.

Since the keyboard was difficult to use, all BASIC-commands had a short command on a specific key. You pressed SHIFT and the corresponding key to write out the whole command. At least this feature (which has found itself into other computers of the era as well) made it a bit easier to tap down simple BASIC-programs.

VTech also made an Apple II-clone, named Laser 128 (I own one of those as well, however I never got it to work).

SPECIFICATIONS

The specifications on the Laser computers are somewhat shaky. Old-computers.com lists it with 2Kb or 4Kb RAM, where the Laser 200/210 is listed with 2Kb RAM "out of the box".

However, the vz200.org Wiki lists the 200/210 with 8Kb RAM, 6Kb free for user programs. That sounds a bit more true and how I remember things.

The 200/210 used the Z80 CPU chip, running at 3.58Mhz. It has 16Kb ROM with the BASIC interpreter (which are the chips Mr. B swapped for his controller units).

The graphics of the Laser 200/210 is the real "gem". It has a peculiar set of graphics, similar to the Tandy TRS-computers of the time.

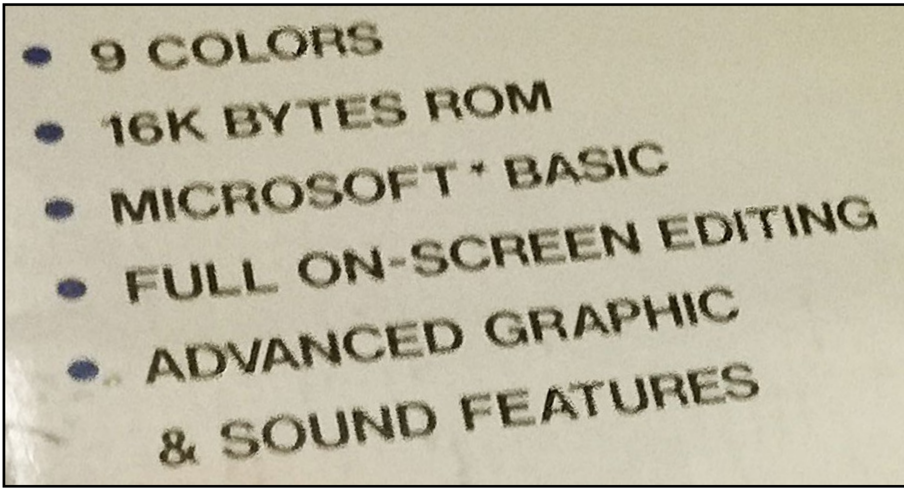
It uses the 6847P-1 video chip and has two graphic modes. The first one – and this is the one that is the original graphic mode when the computer is turned on – is the text mode. This displays 16 rows of 32 characters.

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The boot screen with the text graphics mode.

The weird thing is that everywhere you look, it says that this computer has eight (8) colors. That's actually not true. It has nine (9). That's even listed on the box itself!



The ninth color is the dark green background color used in the text mode. Since you ran this computer on a regular TV, this color was sometimes black.

In what is called "Mode 0", the text mode, you have the eigth foreground colors and two background colors – either orange or the dark green.

But there was also a "high resolution" mode – called "Mode 1".

The resolution here was 128x64 pixels, and here you could only use four foreground colors at each background.

So if you chose the green background color (in high-res mode), you could only use green, yellow, red and blue as foreground colors – and here the dark-green (the ninth color) is not available at all.

Choosing orange as the background color meant that you, in high-res mode, only could use buff, cyan, magenta and orange as foreground colors. Buff being some sort of light orange-brown weirdness, by the way.

The machine itself isn't really impressive. Sound consists of an internal piezo speaker, capable of 31 notes – totally (not that "advanced")!

But it was a fun computer, and for a kid it was a great computer to start out with.

Sadly, there were no sprite support and creating fun games was tricky. There was however dozens or games – or so – released for the machine. I never saw any original games published – or for sale – anywhere, but they do exist.



The Laser 210 Demonstration Tape that came with the machine.

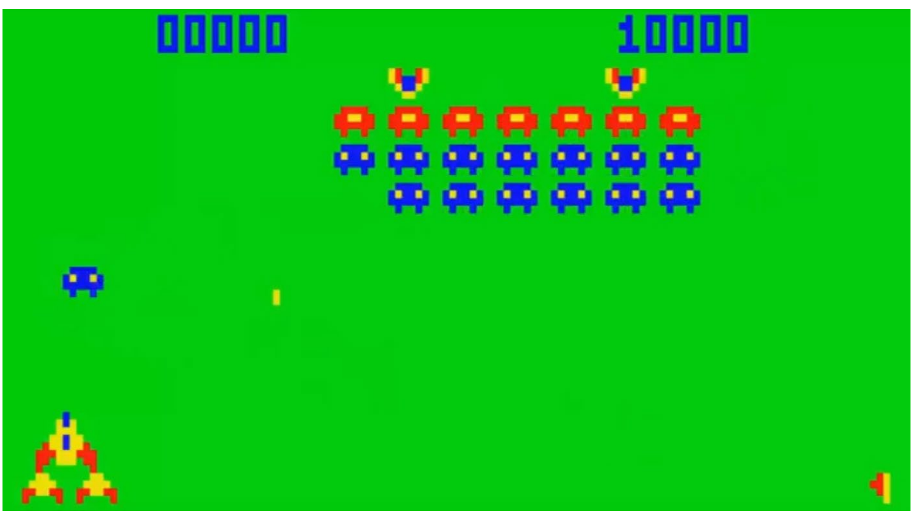
SOFTWARE

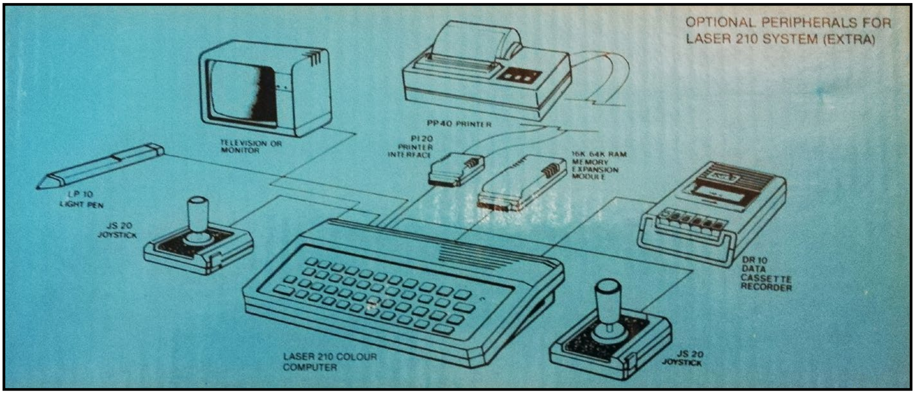
I got tape cassettes copied from Mr. B. That was my only source.

And yes – you used tapes. The machine was capable of using disks since there was a disk drive released for the Laser 300/310, that was backwards compatible – but it was so expensive that a Commodore 64 seemed a more viable option. Besides – the disk drives never made it to Sweden (as far as I know).

In my possession at the time I had a pair of joysticks and a 16Kb Memory Module. The memory module is a huge piece of plastic that plugs in to the back of the computer.

The Laser 210 game Galaxon.





Information about optional peripherials for the Laser 210.
From the back of the box.

The joysticks were two smaller things with two buttons on each side (which however seemed to be wired to the same switch) and connected to the same interface! A peculiar design, indeed, but at least you always knew where both joysticks were (or you lost both of them at the same time).

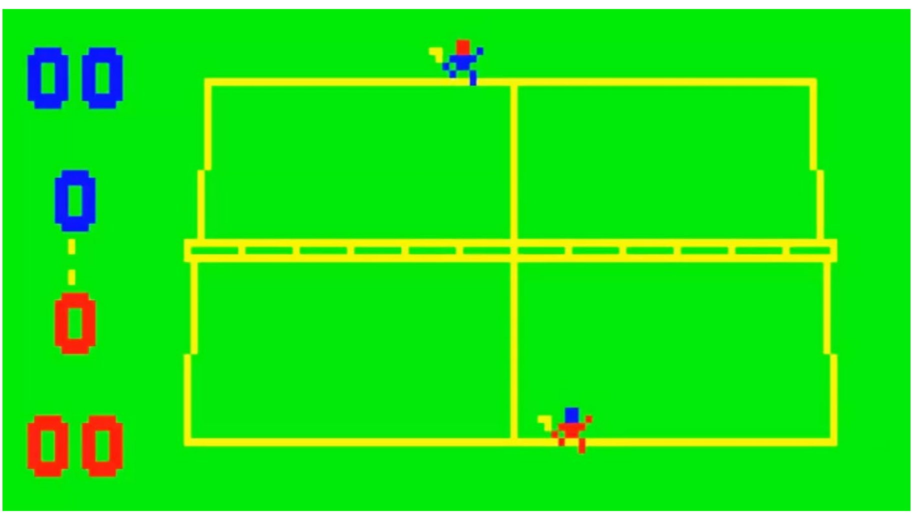
The Laser 200/210 was my first introduction to computer technology. Because of this – and its pretty neat BASIC interpreter – I started to learn what programming was and how to make own games. I never really got great on it – but at least it started a progress that has since kept on going. Today I work with computers daily.

The first game I played on my new computer was Circus. This is a crude copy of the Game & Watch game Fire, that came out in 1980. In Circus you control a small trampoline. You then try to reach balloons by trampolining your computer people. The game has a huge flaw though, since it is impossible to trampoline the guys properly on the far right and left sides.

Later, I got a car racing game (written in BASIC), Tennis (which was my father's favorite) and a few others.



Above: My first game ever! Circus, for the Laser 210.
Below: Tennis, my dad's favourite game.



COMMUNITY

The Laser community was not large in Sweden, and due to the fact that Mr. B was involved in illegal activities – and perhaps even treasonous – he never tried to hook me up with much information, accessories, games or even friends who owned the same computer. Hence, it was difficult for someone living in the deep forests of Sweden to get more involved.

In 1987 my father purchased a Commodore 128, and I sold my Laser 210 to a girl in my class. I hope she took good care of it.

But about 10 years ago, I again contacted Mr. B and asked if he had any computers or “Laser stuff” left. He had a lot!

I went there together with a friend and bought five working versions. I traded one, sold one and kept one. That’s one pictured in this booklet.

Mr. B probably had more items for the Laser-computers as well, but I never got the chance to get anything more. Most of the stuff was packed down in boxes and Mr. B asked insane prices for most of the stuff. Maybe he saw a chance to earn some hard dough on the things he had left from his shady business.

Either way – the computer I own today still works. It had been in a storage room for almost 30 years – unopened - but still worked perfectly fine!

At that time I started to check around internet for other people with the same interest, and found a lot of VZ/VTech communities, forums and websites. There is an abundance of these sites and information still left, and I have listed a few at the last pages of this book.

COMMUNITY

The Laser 210 was for me an amazing invention. It wasn't long lived, and the competition made it a hard sale.

But it was obviously very special for a lot of people. I wanted to write down my own thoughts on this little gem, a forgotten 8-bit computer that today almost no one uses.

In the dawn of "Fantasy Consoles" (as the PICO-8) there might be of interest to go back and see what these machines actually looked like.

So if you ever get hold of a real Laser 210 – keep hold of it and never let it go. It might be valuable – someday...



The Laser 210 Memory Module. This unit added 16Kb RAM, which was precious at the time. Note the screwdriver which was supplied with the module, for unmounting the metal plate on the computer where you would fit the module. It is large! The unit measures: 150x85x50mm (approx 6x3x2 inch).

LINKS...

VZ Alive

One of the “authorities” on the Laser computers, with lots of information, software and even a forum that is still alive!
http://vzalive.bluebilby.com/

VZ200.org

Another website filled with information, software and links to emulators.
http://www.vz200.org/

Old-computers.com

The Old Computers’ listing of the Laser 200/210:
http://www.old-computers.com/museum/computer.asp?c=155

Wikipedia

The Wikipedia listing of the Laser 200/210:
https://en.wikipedia.org/wiki/VTech_Laser_200